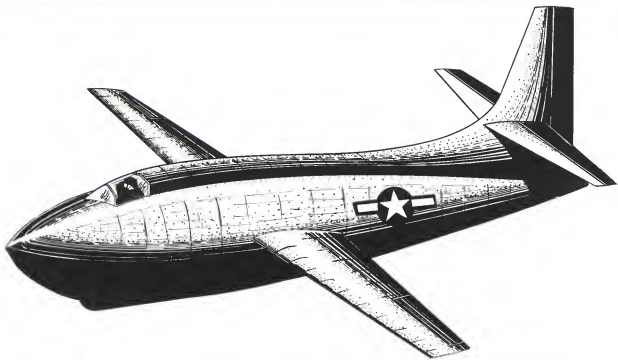


# Aviation News

McGraw-Hill Publishing Company, Inc.

AUG. 19, 1946



**First Supersonic Rocket Plane:** First published artist's drawing of Bell-built XS-1 rocket-powered plane with which Test Pilot Jack Woolams shortly will make a bid to achieve supersonic speed at Muroc Army Air Base. Later, the National Advisory Committee for Aeronautics, for which the plane has been built, will attempt to exceed 900 mph. with the XS-1. Plane will be taken up to 35,000 ft. by a B-29 and there launched. Three models of the XS-1 are being built, one for the AAF, one for NACA, and one for experiments by Bell. Another supersonic project reported in the design stage at Bell is understood to have sweptback wings. Still another high-speed research project is being undertaken for the Navy by Douglas Aircraft Co.

## Munitions Board Weighs Industrial Mobilization Plan

Nelson is Truman's consultant; military favors 'pilot line' technique.....Page 7

## Army Moves to Resolve Guided-Missile-Plan Conflicts

Favors separate development on lower levels, coordination on highest levels.....Page 8

## Taylorcraft Pushes Expansion; '46 Output Tops 2,800

All-metal planes seen replacing fabric models as firm initiates new designs.....Page 13

## Navy Reveals Telemeter Pilotless-Testing Technique

Use of drones in crash maneuvers seen providing vital new data.....Page 19

## N-S Carriers Score Panam's Rate Slash to San Juan

Charge certificated line tries to stifle competition on lucrative run.....Page 23

## Regional-Carrier Concept Advanced by Robinson Line

Mail rate of 25c called more than adequate; see ample load factors.....Page 25

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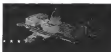


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### THE AVIATION NEWS

## Washington Observer



**MEXICAN BORDER PATROL**—Justice Department is not publicizing it, but a close watch is being kept along the U. S.-Mexico border for illegal passage of surplus combat aircraft into Mexico. Officials have detected a slow leak of old warplanes into Latin America, despite the ban on such exports since the end of lend-lease. Middlemen in Mexico have found a ready market for some ships which have been flown surreptitiously across the line after legitimate purchase in this country.

\*\*\*

**EXPORT-IMPORT BANK AID**—Export-Import Bank is more likely to decide ultimately on giving aid to foreign purchasers of U. S. transport planes. It is to helping U. S.-owned airlines. The bank's theory is that greater capital in this country is more likely to underwrite such financing for the world's leading airline system. Foreign buyers, on the other hand, may be better to make huge investments in the airline system because of rapid obsolescence of equipment and lower volume of traffic. The bank is still gathering data on the effects on our aircraft industry of maximum foreign transport purchases in this country.

\*\*\*

**DUCK FEATHERS BY PLANE**—Most of that batch of 100,000 pounds of China duck feathers War Assets Administration is advertising for sale were taken out of China by airplane during the war. Now it can be revealed that duck feathers were one of the secret items on wartime cargo planes flying over the hump into India. They were wanted for manufacture of flying suits and other high-pressure suits.

\*\*\*

**ECHOLS DISCUSSED FOR ALA**—When Coast and Coast officials have proposed election of AAF's assistant chief, Lt. Col. Oliver Echols, as top executive of their new group, Aircraft Industries Association, in Washington. Informal discussions with the general will be held upon his return from Japan, about Aug. 15, and the matter has already been the subject of conversation in high military circles. Selection of the war-time Deputy Chief of Staff in charge of research and development is viewed by his proponents not only on the basis of his experience and capabilities, but the fact that the industry must maintain close liaison with the services and meet their demands for technical planning, research, development and industrial production generally. Furthermore, it is pointed out, a technical top-order would not materially in the industry's hands to capture the military field, which promises to outpace the non-military warplane.

**SEN. BROWSTER'S HOUSE VOICE**—Republican Margaret Chase Smith who attacked the domestic airlines in the House of Representatives as "quasi monopolies" performing unsatisfactory service, in her demand for a Congressional investigation of the airlines next January, is the Maine colleague and friend of Sen. Owen Brewster, Congressional defender of Pan American who has also frequently straggled against the domestic lines as well as to cover the international routes. Chances of such an investigation are looked remote.

\*\*\*

**PORTS WON'T SUFFER, YET—OWNER** Director John Sweeney's order halting public works building up to Oct. 1 will have no effect on airport development. CAA will not be ready to spend airport projects before Oct. 1, when it hopes to enter arrangements with states and local governments for financing developments with the \$61,000,000 appropriated for the purpose for the current fiscal year. However, if by Oct. 1 used and other construction materials are still short of housing and other reconstruction programs, the loss on public works may be extended.

\*\*\*

**AIRLINES' BUDGET GOES UP**—The worldwide increase in both domestic and international air traffic is sending the budget of the Air Transport Association to a new high. Directors have approved expenditures of \$985,000 for the last half of 1946, including \$417,500 as a general fund, \$100,000 for an annual program program, \$187,350 for the Air Navigation Training Center, and \$115,000 for airport lighting tests at Newark and Chicago airports.

\*\*\*

**WARREN STILL SMARTING**—Comptroller General Lindsay Warren's recent charges before the Senate's War Investigating Committee that "everybody and his brother profited out of the war"—giving the public the impression that every war contractor was profiteering—is not being given any weighty consideration by senators. Members of Congress, while highly respecting Warren for his unswerving public service in watchdogging public expenditures, are well aware that the GAO chief was, and still is, asked at the fact that GAO was not given review powers over the contract termination settlements of the procurement agencies. Senators remain convinced that most contract termination settlements are justifiable, and thus simply because a few cases involve fraud, all companies receiving termination settlements should be kept up in the air for up to 20 years while GAO studies make microscopic investigations of such settlements.

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## Exhaust systems...for jet engines



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## Joint Munitions Board Weighing Plan for Industrial Mobilization

Donald Nelson enters picture as Truman's consultant; Military favors 'pivot line' technique as industry shares from war developments.

By WILLIAM KROGER

Problems of industrial preparedness, being studied quietly by the Army-Navy Munitions Board, have been complicated by the suggestion of former War Production Board chairman Donald M. Nelson into the picture, and tangible recommendations may be delayed.

While his role is not yet either official or clearly defined, Nelson has been invited by the President to confer on stand-by plants. Such a conference may lead to one of several things: an overall study by Nelson on surplus plants, a new coordinating agency, or merely a consultative position to Government agencies already working on the stand-by task.

**Nelson a Factor**—Regardless of the final decision on what Nelson is to do, any contact with stand-by plants will greatly affect present thinking on industrial preparedness.

The plants, if not the backbone of the industrial system, are at least one of the main vertices.

Although there has been no official decision on what plants to maintain in stand-by, and the scope of such maintenance, the year-old recommendations of the Air-Civilian-Carrier Commission for ten airplane and four engine plants have been generally accepted. Consequently, the stand-by problem has been temporarily pushed aside as ANMB moved ahead on studying other complexities of industrial preparedness.

Current thinking lays with what—if it is proposed as policy—undoubtedly will be labeled as a complex knot. This would be the "pivot" set-up from the military viewpoint.

**Facilities production lines**—present products on one line, "pivot" wartime products on the other, a very small amount, but sufficient for

testing, study, and more important to supply "know-how."

**Special engineering**, purchasing and supervisory staffs in major private contracting plants. Key men would be the purchasing personnel who would study critical items and contact possible suppliers.

**Smaller staffs**, but on a smaller scale, in plants of suppliers and sub-contractors. The same system would extend all down the line to producers of raw materials.

**An over-all**, tightly integrated industrial system so well-ordered and supervised that within 34 hours conversion could be made from peace to war with a reasonable expectation of full war production within days.

How much that "pivot" set-up would cost, the planners don't dare think. Nor are they too anxious to discuss it publicly in view of present insistence on government economy. Lacking an immediate possibility of putting it into effect,

a compromise proposal that is evolving takes roughly this form:

**Small purchases** of military aircraft and components, not for tactical or strategic purposes, but merely to keep alive "know-how."

**Stockpiling** of critical materials.

**Mass production** of tools for them, although standard in most places, that still are critical.

**Redistribution** of a small way of plant production lines.

**Thorough breaking down** of drawings of plants into various parts and components with a view to establishing sources of supplies and potential substitution.

For this, ANMB has about \$12,000,000 of the Air Force money and an indefinite amount from Navy's Bureau of Aeronautics. For critical aviation purchases during fiscal 1947, Army and Navy have about \$3,000,000. Stockpiling is a lesser problem. Congress has already authorized expenditures of \$1,500,000,000 over a five-year period to lay by a stock of critical materials.

The entire program—if it could be called that in its formative stage—is an outgrowth of repeated warnings from the military that if there should be another war, the U. S. will be hit first, have no time to mobilize its industry over a two or three-year period such as was the case during the years immediately preceding World War II.



**HARD AGROUND:**

In order to train helicopter pilots in art of landing on the deck of a ship rolling and pitching at sea, the Navy has developed this land-based rolling deck. It duplicates the movement of a landing deck aboard ship and is used for training purposes by the Navy's first helicopter squadrons, VV-5, (Martin and Reiman photo.)

**Preparedness Label**—What the planners actually are shooting for is more correctly labeled "industrial mobilization." But as a semantic maneuver they have substituted "preparedness" for "mobilization." That they have felt it necessary to do this speaks out louder than anything the real stamping-block.

Not just Army Ordnance Department, in addition to AAF and USAAC, has had difficulty in getting industry to dedicate time, money and men to studying needs of any future war. Industrialists, with a memory of post-World War II days,

## Army Moves to Resolve Conflicts In Guided Missile Programs

Aurand encourages separate development agencies on lower levels but will seek to coordinate AAF and Ordnance efforts on higher levels.

Closer coordination between Army agencies engaged in guided missile work and the further possibility that all Army-Navy activity in this field will be turned over to a single group, is seen as the result of two highly significant moves announced by Maj. Gen. Henry S. Arsenal, Army General Staff chief of research and development.

AAF and Ordnance officers concerned with guided missile contracts were to begin a series of meetings last week with the object of eliminating some of the duplicate ordering that has been creating confusion among contractors. This was revealed by Aarand at a news conference called specifically to discuss reports of "conflict" between AAF and Ordnance on guided missiles.

**Reverse directive**—Actually, it is believed, the AAF-Guidance meetings will go far beyond mere contractual details, and *Acres* indicated as much by stating that the report on the meetings may define a revision in the McNamara letter of Oct. 1964, which laid down the broad principles under which AAF and Guidance have been pursuing coastal resource research.

Admitting that there are a variety of interpretations of the Mc-Namara letter, Ayres insisted there was no actual conflict between AAP and Ordinance. Under questioning, he conceded that the various interpretations did constitute a "conflict of ideas."

is reported previously in *Avic.*

already won the names of their companies in headlines, with the words "warmongers" or "merchants of death" appended.

As modification, ANMIL is using the word preparedness, believing that the bulk of the public wants the country to be prepared, but that few want it mobilized. Staff, plans are not being worked out entirely by some segments of industry, although the trade associations, notably, the Aircraft Industries Association, Navy Industrial Association, and Army Ordnance Association are working closely with ANMIL.

be wise. It might be harmful to "a child's progress," he explained.

The second significant move announced by Ainsard is the reconstruction of the Joint Guided Missiles Committee within the framework of the recently established Joint Research and Development Board set up by the Secretaries of the War and Navy. JGMC functioned during wartime to coordinate Army-Navy work. Now, the committee will, according to Ainsard, undertake the "liaison-ship" between the Army and Navy as guided missile work.

Aurand stated that under its charter from the two Secretaries, the Joint Board could merge Army-Navy guided missile research. He said there is some talk of setting up a "task force" to do that job.

Meanwhile, the Navy, not to be outdone by recent AAF publicity and its guided missiles, over the week-end released a report on Navy activity. It detailed progress that has already been reported in *Aviation News*, June 24.

## ATS Will Push Jobs For Flying Veterans

Aeronautical Training Society, was here organization of contract flight training



W. B. Keel, W.A.T. programme  
(has) is much in line with the past  
work

Absent from the ATS sphere will be activity on behalf of non-scheduled aviation, a field in which the organization, since the end of its last contract work in Oct. 1949, was more and more effective. Now, with four of its members certificated carriers (Wiggins, Pioneer, Monarch, Southwest), ATS will take no further position on the non-scheduled issue.

ATS effort will now be turned on (1) jobs for AAF veterans; (2) cooperation with other aviation groups on problems or general concerns; (3) national defense. ATS will continue, however, as it has in the past, to be a leader in liaison between the Veterans Administration and flight schools on aviation training for veterans.

In a move that was an entirely to welcome as the decision on non-

scheduled aviation, ATS ignored the question of broadening the membership base. Several technical schools and aircraft dealers, in months past, had unofficially inquired about ATS membership and there had been some reason to feel that a new membership class would come out of the annual meeting.

William S. Kent, Memphis, Tenn., president of Southern Air Service, was elected ATA president, a position that has been vacant since the resignation last year of Woodell Combs. Kent, a life for many years, is active in numerous Memphis businesses in addition to his freight-line operation.

Mr. C. C. Massey, Glendale, Calif., was elected vice-president, and Wayne Westhaver, unaffiliated, secretary.

Directors elected are: R. Merrill Anderson, Milwaukee; Capt. Maxwell W. Balfour, Tulsa; Hal S. Durr, Chicago; William J. Graham, Pittsburgh; Beverly E. Howard, Grangeburg, S. C.; Albert I. Lodwick, Lakeland, Fla.; Maj. William F. Long, Dallas; Tex. Harkin, Tulsa, Calif.; Rudy Van Doren, Akron; Harry White, Palo Alto, Calif., and Kurt and Mosley.

## Draft Relief Is Seen For Air Engineers

A long campaign by the aircraft industry to obtain some relief from the effects of the draft on its engineering and other skilled personnel is expected to be rewarded to some degree at least this week with the issuance by Selective Service of orders to its local boards establishing procedures for deferment of students.

Officially, the plan is to give additional consideration to non-fathers between the ages of 18-25 whose services are indispensable to activities "essential to national existence." In this category fall workers in many types of industry, including housing, although the situation has been particularly critical in steelwork because of the heavy volume of research work being undertaken.

The key group under the new plan will be, as always, the in-  
board. Advantage of the system,  
however, is that it furnishes ma-  
chinery to enable a bath govern-  
ment office to put the weight of its  
influence behind the management's  
side in deferment of a worker.

In the order, four Government attorneys are named "respondents."



## Biggest Bomber Flies

The world's largest hangplane, the six-engine X3-N, climbed smoothly into the air after a take-off run of approximately 4,000 ft. at Ft. Worth, Tex. recently, circles the city and surrounding Texas country for a maiden flight of 30 minutes and then came into land using only 2500 ft. of the 8500 ft. runway.

Expected to be a mainstay of the AAF's new Strategic Air Command, the giant bomber is credited with a 30,000 mile range, capable of striking any point in the world from the continental United States. It carries a load of 30 tons, is credited with a top speed of more than 550 mph and is powered by six Pratt & Whitney Whetp-Mycro engines of 3,600 hp each, which turn 10 ft. Curtiss-Wright blade propellers in a pusher installation.

Developed jointly by Canadair and the Army Air Corps, with assistance of MACA laboratories on many wind tunnel and structure tests, the great bomber in sheer physical bulk over shadows any plane now flying and is exceeded in size only by the eight-engine B-29 Superfortress flying boat, which has not yet flown.

The B-38 has 230 ft. wingspan, and its fuselage is 343 ft. long while the single tailfin is 47 ft. high. The fuselage is fitted with two pressurized compartments for the crew of 15, indicating it will be used in high altitude operations.

Two before the initial takeoff, the plane made high speed taxi test runs. Then each of the six engines was powered up, and it took to the air.

Air Force officers have confirmed that Consolidated Values has been given a large order for additional B-36s, and that the "K" will be removed from the plane's designation as soon as it makes additional test flights.

The D-16 was too big to hide. Accompanying photos are an American News flash picture, and an IAP-released ground picture showing the navigator (right) D-16, dwarfed alongside the new man over board.



power. Civilian Production Administration, Office of Scientific Research and Development, Office of Education, and National Housing Administration. Plans for development of aircraft engineers and scientists and others working closely

any on developmental projects will be sent to CDRD for approval.

If approval is given, OSRD transmits the request to Selective Service which then sends it to the registrant's local board with instructions that "most serious con-



## New Eyes for the Fleet



file X036-1

A new Navy plane, designed and manufactured by Edo and incorporating twenty years of seaplane and float experience. Produced in three models, as a single or two-place scout or trainer, with high performance built into all three.



EDO AIRCRAFT CORPORATION, College Point, Long Island, New York

## PRIVATE FLYING

### Taylorcraft Pushes Expansion As '46 Production Passes 2800

All metal planes seen replacing fabric models as firm swings into new designs, many production abnormals developed through new processes.

By ALEXANDER MASURELY

Taylorcraft Aviation Corp., at Alliance, Ohio, is rolling out airplanes (2800 in the first six months of 1946) and expanding plant facilities to make more. A visitor gets a commentary impression he is visiting a wartime factory again during the 1940-1945 days when building construction and increasing plane production went hand-in-hand.

The 2800 figure is hardly a feat, since the plant turned out 350 complete airplanes during the month of July although it shut down two complete weeks due to a shortage of engines. Best day's production of airplanes complete with engines, in 1944, was 33 airplanes, but one a number of days the company has turned out as many as 40 to 51 assembled airframes, wings, landing gear and tailgroups, some of which could not be completed because of lack of engines.

**Goal of 5,000 Planes**—Starky, vigorous Nash Koon, Taylorcraft president, is shooting for a goal of 5,000 completed planes in 1946, which means he will have to do about 1,000 a month, in the last five months, at an average of about 40 a day. With a promise of more tugboats in a steady flow, and with virtually all of his construction program under roof, he has a good chance of making his goal. Eventually he is aiming for production of 700 planes a day.

To do the job, Taylorcraft has

275,500 sq. ft. of plant space at Alliance, and 128,500 sq. ft. of space in a newly acquired Cleveland plant which makes 46 different sub-assemblies and components to be fed into the final assembly line at Alliance. The new plant currently is employing 1,258 while 432 more are working in the Cleveland plant.

The only Taylorcraft airplane now in production is the two-place Model 15, of welded steel tube, fabric-covered construction, powered with a 65 hp Continental engine, and selling for \$3895, standard, and \$3939 in a deluxe model. Basically it is the same two-place side-by-side B-12 which the company sold prior, but a trip through the plant shows a number of changes, which have come with service experience on the airplane, and with growing knowledge of production technique.

**Reinforced Fuselage**—The fuselage has been beefed up at points where experience indicated need for it, including extra welded sleeves at rib/station struts, added welded joints at front and rear wing butt joints, welded reinforcement bracing added at firewall. One-piece welded metal doors are provided, along with aluminum corrosion-resistant fuel tanks.

Probably the greatest change is in the Taylorcraft wing, which is now made in three sub-assemblies, nose section, center section and rear

## Model 15 'Specs'

Revised specifications for the Taylorcraft Model 15 four-place plane, now powered with a Franklin 180 hp six cylinder engine, and holding a CAA type approval certificate, include:

Top speed	120 mph
Cruising speed	87 mph
1 hour speed (Range)	50 miles
Range	450 miles
Gross weight	1600 lb.
Wingspan	30 ft. 6 in.
Takeoff price	\$3895

section, which are later joined together. This design makes possible field replacement of a segment of a rib, without replacing the whole rib. Ribs are stampings from aluminum alloy, and spars are multi-laminate wood. Leading edge ribs and joints are covered with tape for smoother airflow. A safety clip wire stitching process is being used as an assembly time-saver as the fabric wing-covering.

**Safety Control Wheel**—An intermediate refinement in the new Taylorcraft-designed "double-acting" safety control wheel, designed so that it acts as a shock absorber—shock absorber, for pilot or passenger if he gets into trouble, instead of as an added hazard. The wheel is replaced on the standard model B-12.

Performance data for the DC122 as given by the manufacturer, includes: Cruising speed, 80 mph., top speed 118 mph., landing speed, 35 mph., idle lift run with full load, 150 ft.; first maximum rate of climb 600 ft.; maximum range, 550 miles.

Second production plane in the Taylorcraft program, the four-place Model 15, has been delayed by numerous engineering details and design changes, and finally by a recent fire at the Alliance plant which destroyed age, dies and fixtures which were to have been used in volume production of the new airplane, started with three two-place airplanes belonging to the Taylorcraft employees flying club. However a pilot production line for the Model 15 is again being formed.



**Two-Place and Four-Place** The four-place Taylorcraft Model 15, which recently received its NC from CAA, and is soon to be in production at Alliance, and the two-place Taylorcraft Model DC122 D, which is in production, are shown here. Two-places is at left.



The four-place Taylorcraft Model DC122 D, which is in production, are shown here. Two-places is at left.



**Taylorcraft** Plans Aerial view of the Taylorcraft Aircraft Corp. plant at Alliance, Ohio, shows new addition (with light colored roof at left) now being

and the airplane, already NC81 by CAA, is due to be in quantity production before the first of the year, at an estimated list price of \$5,600. **Changes in Prototype**—Basically it is the nine four-door airplane which was first exhibited as a 135 hp flying prototype at the St. Louis NAAAP meeting in December 1944 and was described in *Aviation News* Feb. 5, 1945. However since that time, there have been some changes. It now is powered with a 180 hp neo-cylinder Franklin engine, the latest model that powers two of the four-place competitors now in production, the Stinson Voyager 190 and Bellanca Crusier 8. Like the two-place NC320, the Model 13 prototype is a fabric-covered welded steel airplane and the production airplane also will be of this type construction.

However, Taylorcraft, like most other lightplane makers, is not going to stick with the fabric-covered plane construction indefinitely. Already under structures built as a new two-place Model 16 personal airplane. With 100 hp Franklin 4-cyl engine, it is all-metal except fabric wing-skinning, and this too, may be changed to metal skin by the time the plane goes into production. It is quite possible that the new Model 16 may make its first bow at the National Air Show in Cleveland in November.

**Flavus All-Metal—Bernard Rust**, the president's son, and head of Taylorcraft production, points out that the advantages production-wise are as much in favor of all-metal construction, that there seems little doubt his company will change over eventually to this type of

construction. Plant has 377,550 sq ft of floor space. Engine delivery delays grounded the new plane at upper left of field, complete except for engine.

plane-making, probably through a gradual process, continuing as present two-place model indefinitely. Although Taylorcraft was among the first lightplane builders to market a tri-cycle-pair lightplane, presently, the company apparently does not plan for any nosewheels on its planes in the immediate future.

Having first priority in the company's immediate future dealer-help projects is a free freight course to be offered to anyone interested through distributors and dealers. As far as we can find out it will be the first of its kind. The company anticipates that any who enroll will offer live prospects for flight training and as many courses for plant sales. The free-haul course is designed to answer all the primary questions asked by the non-flyer about operating a light plane, and will include movies and lectures.

Besides replenishing its backlog for making down machines in producing the NC120, a major achievement of Taylorcraft has been development of substitute components and sub-assemblies, which would be fed into the production line to maintain a regular flow despite shortages of original materials. For example, the company has used three different woodruffs, one of an aluminum-woodruff material, one of stainless steel, and another of an inner steel stay. All-metal alternators and all-metal engines also have been used on some planes, during the worst stage of fabric shortage.

**Watson Heads Flyer's**

Forrest Watson, who operates a wheel farm near Thomas, Okla., and who uses his lightplane almost as much as his automobile, was elected president of the National Flying Parents Association, at the Seattle, Okla., convention. W. R. Finsel, Latam, Kan., is vice-president, and Bert A. Hansen, Vernon, Minn., secretary-treasurer.

The treasurer, a former Boeing Aircraft Co. engineer, now messenger, plans to visit and stimulate special interest in the new sport for his device at further tests and his experiences.

## VHF Lightplane Test Proves Successful

Three flying laboratory planes of Boeing Radio Division, Bendon Aviation Corp., (Aviation News, April 22, 1946) have flown more than 12,000 miles, thus far, during demonstration flights and tests of VHF radio transmissions from personal planes. They have made more than 18 demonstration flights from airports in 32 states and the District of Columbia, the company reports.

The tests of clear transmission were made over flat terrain, water-making country, hills and valleys beyond line-of-sight at altitudes of 200 to 1,200 ft., in rain, thunderstorms, low ceilings, darkness, and at distances from 40 to 130 miles.

Using Keweenaw, Omaha and Paulding planes, with a small 10-watt 5% in Bendon VHF transmitter, the test pilots transmitted from the planes on a test frequency of 131.1 megacycles, and on the 131.1 and 131.8 megacycle frequencies assigned to private flying. Signals were usually loud and clear, and were heard unlike even under the most adverse conditions.

A demonstration at Sky Ranch airport, Denver, showed the superior qualities of VHF, which transmitted over other lightplanes at 3165 kilocycles, was incoherent by atmospheric static and could not be "read" when they were 8 to 10 miles from the tower. Meanwhile the Bendon laboratory plane at a distance of 95 miles was transmitting to the tower with a loud and clear signal, the company reported.

## Baltimore Pilots Plan Volunteer Sky Police

Members of Baltimore chapter, National Aeromarine Association, are planning a volunteer policing at skies in their area to curtail low and reckless flying, as an effort to prevent public enemies from being around in plain where regulations harmful to all private flying, may be demanded.

The plan calls for maintenance of a roster-list of the NC-members of all planes based in the area, with the name of the pilot, owner, and the airport at which the plane is based. All chapter members, according to the plan, will be asked to take the license number of any plane they see which is flying too

low, or standing or flying recklessly, and report the violation to the keeper of the roster list. Local airport and flying school operators have pledged their cooperation.

The offending pilot will receive a warning after a first violation, but if a second complaint against him is reported, steps will be taken to prosecute as ground law, or both. One Baltimore area operator told he had been forced to "washout" two students taking instruction under the GI program recently because they practiced as rooftop "lookouts" after warnings.

## New Interests Buy Control of Johnson

A group of Texas and Middle-Western business men has purchased controlling interest in Johnson Aircraft, Inc., manufacturers of the Beech personal plane, from H. S. Johnson and sons. L. D. Thomas, Ft. Worth, who was president of Beech Aircraft Sales Corporation, national distributor of the Beech, was elected to the same post in the new organization, to be known as the Beech Aircraft Corporation.

J. Kenneth Starr, of Kansas City, Mo., a executive vice-president, Muddy L. Tamm, chairman of the board, and H. Wallace Bessler, the latter two of Fort Worth, secretary-treasurer.

The elder Johnson was the founder of the company bearing his name, and designed and built the Beech, first personal airplane with a retractable landing gear to be licensed.

## \$5 Fee Effective

Beginning Aug. 15, the new CAA five-dollar fee for aircraft registration will go into effect, on all applications with postmarks after that date. The change has caused considerable industry opposition, because it is as much higher than fees charged by states for automobile registrations. It does not apply to aircraft already registered, but must be paid on any new transactions from now on.

A fee is required for registration of a plane with each title, with no recordation of lien. To register an aircraft and record a lien against it, a \$15 fee is required, while \$5 is charged for recordation of a lien. Payments must be made by money order, postal check or cashier's check payable to the Treasurer of the United States. Currency is accepted, but CAA insists on responsibility for loss of the funds. Applications for records and payments should be mailed to Civil Aeronautics Administration, Civilian and Registration Section, A-300, Washington 25, D. C.

Mr. Thomas said additional contracts will be awarded immediately for sub-assemblies to speed production of the plane, and that consideration is being given to various wartime aircraft plants which have indicated a desire to contract for manufacture of the entire ship.

An additional 10,000 square feet of floor space for the main factory building will be provided in an addition.



**THALMAN'S HIGH STABILIZER**

Latest version of the Soft Lake City-built Thalman Special, known as the T-48, has retractable high-stabilizer, gear-mounted in front of wing at tail-end of the prop wash which Harry Thalman, designer and builder, shown in picture, was given the plane greater stability and maneuverability. A triangle-prop 12 hp. Thalman T-4 will go into production next spring. The pendulum-compression prototype, has a 40 ft. wingspan, a top speed of 143 mph. Thalman claims, and a stall speed of 38 mph. It was first pictured and described in detail in *Aviation News*, Feb. 25.





#### ELDRED FLOATPLANE:

Denny Eldred, Cleveland, O., designer, is shown with his new inverted gull-wing two-place floatplane, which cruises at 85 mph. and has a top speed of 125 mph, he reports.



#### DUCKLING:

A two-place rubber airplane is the first of a line of four lightplanes planned by International Aviation Corp., Cleveland, and its associated company, Tucker Aircraft Research Corp., Neascote, Del. A model of the "Duckling" alone has already been ordered, by remote control.



#### LOFTING NEW MODEL:

Lifting the fuselage of the new experimental all-metal two-place Model 36, preparations in planning gear and further for its production, indicate that Taylorcraft is not overlooking the noticeable recent trend toward all-metal lightplane production.

#### Glider Record Smashed By 76 Mile Flight at Elmira

Frederic B. Compton, Macon, Fla., sailplane pilot was crowned with breaking the national distance-record for single-place motorcraft, last week, at the 12th annual national soaring competition at Elmira, N. Y. Compton flew his plane 76 miles, more to New York and back to Elmira, nearly doubling the pre-war official record of 60 miles set in 1939 by Chester J. Decker, Edgewood, N. J.

John Babson, Alhambra, Calif., distance champion, made a flight of 120 miles, landing in Lenoir, Pa., and attaining an altitude of 11,600 ft. Compton's flight was the second to beat the 1939 mark, when Maurice L. Wiles, Elmore, had made a 53-mile roundtrip flight the day before Compton flew the 76-mile trip.

#### Roiler Heads Coastal Aviation at Brunswick

Coastal Aviation Association, Brunswick, Ga., which organized last Fall when private planes and amateur air enthusiasts found no public flying field available, has elected James M. Roiler president and Charles Zetterstrom, secretary. Ed Messick, Ned Ebert, Eugene Haskin, Harry Smith, Clarence Davis, J. Wesley Hopkins, Jr., Charles Haglund and Stanley O'Quinn are named to the board of trustees. The organization has raised \$7,560 for construction of a

#### Flying Dairyman

Collecting milk from dairy farms in his area by plane, Paul Hillman, operator of the Liberty, Wis. cheese factory, recently made some 30 landings and takeoffs in terms of his production, in two hours, and by 8:10 a. m. he had completed his collection. Hillman, a private pilot, noted an Aerom from the nearby Waterbury, Wis. airport, for the flight. He used but one prepared airstrip, his own at the factory, making the four landings in adjacent fields and on lawns. He admitted that he would have saved time and money by following his regular truck route, but made the flight as an experimental demonstration of lightplane utility in rural areas.

new air park in Glynn County, assisted the city in technical and other matters in connection with the building of the air park, and proposed a system for its operational functions.

#### Ensign Tamed

The two-plate all-metal Ensign, new personal plane being developed by All-American Aircraft, Inc., Long Beach, Calif., has just completed spin wing tests, and is expected to complete CAA testing for certification in about six weeks, company officials make known last week.

The first 1948 production model will be powered with an 45 hp engine, and have fixed tricycle gear. A subsequent model using 55 to 135 hp with retractable landing gear is being planned. The production line will be started on completion of the Civil Aviation Administration tests.

#### Mocker Handles Liaison

Don Ryan Mocker, Washington, D. C., has been named personal aircraft liaison officer for the National Air Races (Aug. 29-Sept. 3, Cleveland) by Don Franklin, NAAE general manager. Annual personal plane events scheduled in a "fly-park" of the various new gateway planes.

Mocker is the publicity executive for the National Aircraft Council of the Aircraft Industries Association, an assignment from Bill & Knowlton, public relations organization.

## Briefing For Private Flying

**PREPARED POSITION**—Persons who come to the National Aircraft Show at Cleveland, Nov. 15-21, to exhibit personal planes or to see them, will find that the lightplane show has been assigned the preferred position right inside the entrance of the Lake View Plaza which is the show area. As the first purchaser show actually sponsored by industry, the November event (not to be confused with the Labor Day National Air Show, also at Cleveland) promises to have the most complete staccato of personal planes and equipment yet gathered at one place near the West.

**WEEKEND FLIGHT**—Thirty-five years is the average age of owners of 33 84 Locomotive Engines, who made a weekend holiday flight to Buena, Wis., and back, recently. All have been in fly in the past ten months and for many it was their first long cross-country flight. Flights less than the 740-mile round trip were 7 hours. Seven were made enroute at Pecon and Rockford, Ill. The 60 84 Locomotive attended ceremonies for Expo's new Jack Genevieve airport, and spent the weekend camping, fishing, boating and sightseeing. Of the 23 planes, 11 are based at Pecon Metropolitan Airport, E. 84 Lewis, Ill.

**PROPELLER NOISE REDUCTION**—Government officials who are urging use of smaller diameter propellers with more blades, or wider blades to give maximum area for power absorption in lightplanes, in a noise-reduction factor, are assuming speed and production cost factors, one propeller company spokesman says. Additional blades and a more complicated hub would make the small diameter results likely cost far more than the simple two-bladed. Use of a wide paddle-type blade of small diameter, to reduce tip speed, would help the noise factor somewhat, but would cut down thrust efficiency, by a loss in proper efficiency, he says. An loss in efficiency continues to have much of those sales argument on the speed of the airplane, which is its main advantage over surface transportation, the small-diameter paddle-blade propeller won't be too popular, he predicts.

**FROM GLOBE TO CULVER**—Changes of four engineers from Globe Aircraft Corp., Ft. Worth, to Culver Aircraft Corp., Wichita, was announced last week, in an expansion of the Culver engineering staff. Jack Kopper, named assistant general manager of Culver, was formerly chief engineer, and later vice-president in charge of production at Globe. He previously had been a project engineer in the P-51 at North American Aviation, Inc., Inglewood. Other transfers: John H. Wright, new Culver chief engineer, formerly at North American, and more recently assistant chief engineer at Globe; Eugene O. Cho, formerly at North American, and more recently chief designer at Globe; Walter Davies, formerly at Curtiss-Wright, Columbus, and formerly at Globe; and more recently chief project engineer at Globe. Also added to the Culver engineering staff were Morgan Elise, former B-24 navigator, and aerodynamics engineer at Wright Field; Donald Thompson, named chief engineering test pilot, formerly project officer on guided missiles, targets and weapon planes at Wright Field; and Charles Burt, formerly at Globe, and North American, and more recently chief of aircraft design, Wright Field. Culver indicated that his expanded research would go in two directions: Toward development of additional personal planes of "other" passenger capacity, thus the two-place Model V, now in production, and toward development of improved sub-subsized planes for the Army and Navy.

**DANGERS OF FARM FIELD LANDINGS**—In all the current enthusiasm about farm landing strips, and the greater safety of the lightplane for the farmer who has one, the hazards of landings and takeoffs from rough, too-short fields are likely to be ignored. A recent CAB accident report offers a sharp reminder of that fact, in the death of two flyers, Lloyd C. Ellington, 37, commercial pilot, and Paul Leckie, 27, of Menominee, Wis., who crashed in a Fairchild PT-19 near Spring Valley, Wis., March 26. Ellington had attempted takeoff downwind and uphill from a short field, reportedly. Previously he had discussed field conditions with a witness, and decided to attempt takeoff rather than towed a small plane to the south. The plane became airborne, dropped to plowed ground, bounced over a fence, and was airborne about 300 ft. across a ravine but failed to clear a tree and crashed into the valley below.

—Alexander McCurdy



## CECO CARBURETOR..



Photo courtesy of the Glenn L. Martin Company

### selected for the Mighty MARTIN "MAULER"

The "Mauler" has all the requirements of greatness—designed and built by the Glenn L. Martin Company . . . powered by the 3000-horsepower Pratt & Whitney Wasp Major engine . . . equipped with the CECO carburetor, Model 108-CPB-2.

It is the Navy's newest and most powerful single-seat dive-bomber. Designed to operate all the way from altitudes of over 35,000 feet to the "Mitsui" type, its speed in level flight is in the "over 350 miles per hour class" with a maximum flying range of over 1700 miles. As a dive bomber, it can carry 5,000 pounds of bombs or rockets. As a torpedo bomber, it carries one torpedo with additional bombs or rockets. It mounts four 20-millimeter cannons.

CECO is proud of the choice of this carburetor for the "Mauler," another firm in a long line of CECO firms in precision aircraft equipment.

Write us your company letterhead for further information on CECO carburetors, fuel pumps and Protex-Plugs.

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## PRODUCTION

### Navy Exhibits Telemetry As Pilotless Testing Technique

Use of drones in crash maneuvers will provide vital new data, view of industrial engineers observing Cherry Point flight control show.

By BLAINE STURGEHEAD

Application of the Army and Navy telemetry system of guiding planes by remote control and recording instrument readings transmitted by radio from the aircraft holds new promise for plane manufacturers seeking to gain every possible bit of information from flight tests without risking the life of a pilot.

Industry engineers witnessing the recent Navy demonstration of telemetry at the Cherry Point, N. C. Marine Corps air station told Aviation News that the Army and Navy should fly some of their existing planes to the destruction point, controlling the flight by radio. Much could be learned, it was stated, by measuring stress, pressure and accelerations to the point of in-flight breakdowns.

Increasing airplane speeds demand more data. Stalls and slow landings as well will be done by pilots. Radio control gear in later tests provides data on critical Mach number ranges at maximum accelerations and extreme attitudes without danger to personnel. It gives simultaneous observation of all instruments, and data is recorded at ground station on written paper for later study.

Telemetry is a vital aid to development and use of guided missiles, to the testing of air fuels and shapes by free fall rather than in wind tunnels, and to the development of jet-powered fighters to targets that the Cherry Point demonstration dealt exclusively with testing of aircraft.

Cornell Aeronautical Laboratory put on a dive test, using a Curtiss SB3-C5 dive bomber, equipped by a Grumman FPF "cheer" plane CAL is the former Curtiss-Wright Research Laboratory, named to Cornell.

The test drone was equipped with 8 strain gage type accelerometers at an many locations, to detect

factors, stresses, and motions. The dive, scheduled from 10,000 feet was begun long so visitors could see it.

Bill Alford demonstrated maneuverability by instrumenting, to a Grumman FPF Tigeron, which did rolls, reverses, and a few tricks of the field. It was thrashed back not to destroy the FPF class. Bill is developing radio control, but

is not mass-producing equipment. Naval Air Experimental Station at Philadelphia, which began radio control development work in the 1930s, as well as Bell and General, contributed equipment for the demonstration. Cherry Point, having opposite-radial runways equivalent to 15,000 feet, and vast field area, furnished the site.

A telemetry test set-up consists of (1) a track-mounted station which usually handles takeoff and landing of the drone, and receives and records data from a driver's radio, (2) the position drone at 20 feet, with radio receiver control system, and radio data transmission system, (3) the receiver or monitor plane, operating on multiple frequency channels with full automatic transmitter control, (4) a standby receiver plane, following the first monitor, (5) information sent in the drone which transmits photo of down-acting instruments, with pictures recorded in ground station and (6) a radar tracking set on the ground which supplements tele-



**For Chairborne Pilot:** On roof of track-borne telemetry station, dive control drone cockpit is used to take off and land radio-controlled test drones. On cross-shaped instrument panel at left, the air controls in horizontal row, left to right, are: change pitch to control dips of propeller, main radio from ground station to control plane, which takes over when drone is airborne, vehicle vs. of course, then take air elevator, fuel tank selector, cage gear for "rate" control system, engine for "displacement" control system. On vertical projection of panel above, radio receiver off and on, just underneath, no cylinder, manifold pressure or throttle. At right, on chair arm, mounted on vertical cylinder, the control stick, which works like stick on drone, remote being changed with extreme. Next right, two switches control radio off and landing. On the square box, two switches selecting AM and FM radio, the black key has two positions by which pilot selects among 12 radio frequencies assigned to different control functions. Knob at right is vacuum volume control. (Many photo.)



**Bell's New Duty:** Approaches inside the truck records instrument readings and other flight data in the pilot's helmet. Shows above it through a television system. Because of this electronic system, all the information about the plane's performance that would be available to a pilot in the cockpit is automatically reduced to the ground control station. (Many photo.)

meter by recording true velocity, altitude, and flight path.

Bell's super incorporates electronic wires which electrical assistance increases when they stretch to a thin, air-circulating, sensing sensor. Vibration and other test devices are connected to FBI radar signal, which is picked up and started by the ground receiver.

## Martin to Buy Army Airport for \$7,500,000

The Glenn S. Martin Co. will buy the Army's interest in the \$7,500,000 airport at the Martin plant at Middle River, Md., having notified War Assets Administration that it intends to exercise its option on the field which is now surplus.

The airport has four runways, varying in length from 4,135 to 7,180 ft in length, and an administrative building and six hangars. The field originally was built by Martin at a cost of about \$2,500,000, and was used for testing and fly-away deliveries. With the wartime stepped-up production schedule, the Army spent about \$5,000,000 in improving the field. Terms under which Martin will take over the field have not yet been determined.

At one time, the company was willing to sell its share of the field to the city of Baltimore if it would acquire the Army's interest. When the city delayed acquisition, the company withdrew the offer and now expects to be able to utilize fully the entire field and facilities when its Model 200 and 300 bugs coming from the production line.

## Mexicans Produce Mountain Transport

A twin-engine utility transport designed especially for operation in mountainous areas where short take off run and high rate of climb are essential has been built by the National Aircraft Factory of Mexico.

Designated the TYS-3, the plane carries four passengers, pilot and co-pilot. Seats are removable to accommodate two stretchers.

The plane is constructed of bonded plywood covered with a layer of doped fabric to give an exceptionally smooth finish. Power is supplied by two 200 hp Ranger engines turning fixed-pitch wood propellers. Other specifications are:

Length 30 ft  
Span 37 ft  
Crew capacity 1000 lb  
Wing area 325 sq ft  
Max speed 140 mph  
Cruise speed 120 mph  
Climbing speed 100 mph  
Take off 100 ft  
Landing 100 ft  
Max alt 10,000 ft  
Cruising range 400 mi

The "Talleron Romualdo de Construcciones Aeronauticas," the na-

tional aircraft factory, was organized in 1915 and is equipped to build complete aircraft including engines. In addition to the TYS-3, it is presently working on three different series of Arrow primary trainers.

Production at the factory is handicapped, however, by shortage of modern equipment. The propeller carving machine, for instance, is part of the original equipment, while many of the lathes are still hand-cranked. In addition, most of the machines are of German or Japanese design which complicates replacement of parts. Plans have been completed for a modern factory north of Mexico City, but this depends on future appropriations.

## Boeing Kaydet Picked For Chinese Air Force

Boeing Aircraft Co. has received the Chinese Government to manufacture the Kaydet, two-place, open-cockpit high-speed trainer which was used for primary training during the war by both the U. S. Army and Navy.

Two Chinese air force officers have already gone to the Boeing Wichita plant, where the Kaydet was manufactured, and will be followed by eight to ten Chinese technicians who will undergo a familiarization course at the manufacturing of the airplane.

Boeing is turning over to Chinese all drawings, blueprints, specifications, engineering and manufacturing sheets on the plane. Several

flyable PT-17s, one version of the Kaydet, will be overhauled and shipped to China to serve as models for the Chinese manufacturing program.

About 10,000 Kaydets were built at the Wichita plant. The Chinese air force is already familiar with the airplane, having been used since for training purposes by the U. S. in 1942. It was the first aircraft sent to the country to see Boeing trainer.

## Canada Jets Delayed By Metal Problems

Canada's efforts to produce its own jet power plant—the first aircraft engine that will be designed and built in Canada—are being delayed by metallurgical problems and it may be the end of the year before components making start.

Development is by the Canadian subsidiary of the British A. V. Roe Ltd., which recently took over the Government-owned Turbo-Propeller Ltd. Roe has recently completed the design work on the engine and most of the components. The engine is the lightest model. Also, with exception of some license agreements with U. S. firms, the Canadian aircraft industry has built most of the machinery of Turbo-Propeller in the Roe plant at Milton, Ont., site of the wartime Government Victory Aircraft factory, although the machines have not yet been set up. Roe will share profits of the plant with the Government.

The engine that Roe finally will build will be the second of Canadian design. The Government had completed design work on one unit and had started a second when Roe took over the contract.

A V Roe also will produce the plane to be powered by the Canadian jet. Other than the fact that the plane will be a fighter, no information on it has been released. The effort on these plans at the last of a Glanville Motor, being used for tests has not been determined.

The motor was sent from England and tested away in the Royal Canadian Air Force test facility and study at the Edmonton, Alberta, experimental base. Late in June, while being guided by Flight Lieutenant W. M. H. McKenzie to Toronto, it made a forced landing in a small lake and was lost. McKenzie made his way to civilization after 21 days, but most recent reports are that the aircraft can not be recovered.

# Out in Front!

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**Skymaster**  
SERVICE...



AMERICA'S POWER AIRLINE



More West Coast travelers experienced the speed, comfort, and luxury of 4-engine Skymasters on Western Air Lines' California coast routes during July than any other airline. Western scheduled 36, 4 engine flights daily... 806 for the month.



LOS ANGELES SAN FRANCISCO  
Ask, tomorrow, all 4-engine, Skymasters traveling with Western Air between Los Angeles and San Francisco now carry the only all-metal, all-engine Skymasters over the longest traveled Coast route.



LOS ANGELES NEW YORK  
Transcontinental air travelers find in crossing number find that Western Air's "out of" from Los Angeles to Denver, Chicago and New York is the most scenic, fastest, most comfortable coast-to-coast service. Only 21 hours in Kansas City, 17 in Omaha.

More passengers boarded Western Air planes at Los Angeles during May than ships of any other airline... a total of 10,000.

In the West... by Western Air Plane the Western Air ticket office at your city, or your nearest agent.

WESTERN AIR LINES

AMERICA'S POWER AIRLINE

## Lockheed to Buy All RFCBurbankProperty

Announcement of an expansion of Lockheed Aircraft Corp. manufacturing facilities declares company plans to exercise its option to purchase all Birmingham Properties Corp.-owned land, buildings, machinery and equipment in the immediate vicinity of Lockheed Air Terminal under the terms of an agreement with War Assets Administration.

Robert E. Gross, president, said the purchase includes all facilities acquired by RFC and leased to Lockheed for wartime use.

Purchase will result in the complete integration of Lockheed's main factory including warehouse, factory and other buildings, outdoor production areas and the Lockheed-owned Air Terminal. The factory is producing Constellation for foreign and domestic airlines and two types of Navy aircraft.

As partial payment for the facilities acquired, Lockheed will deed the government its factory D-3 at the Air Terminal about one mile from the main plant. This factory is manufacturing P-60 Shooting Stars and is scheduled to continue there for well over a year. Lockheed will continue to operate the factory under lease from the government with an option to re-purchase the property.



### PORTABLE EXTINGUISHERS

Portable fire extinguisher cart built by Walter Kidde & Co., Bellerose, N. Y., for use at airports, contains three 15-lb. carbon dioxide containers.

The transaction involves only real property, buildings and land and the aircraft company will continue title to all machinery, equipment, furniture and portable tools at factory D-1. The deal will result in the establishment of two fully integrated manufacturing units: one privately owned property engaged in civilian transport plane manufacture and the other a government-owned plant in production of the latest military aircraft.

## Kellett Aircraft Corp. Gets Deep Freeze Unk Order

Kellett Aircraft Corp., North Wales, Pa., has signed a contract with Victor Products Corp., Bismarck, Minn., for 20,000 deep freeze units, with the possibility that Kellett may be given an additional order upon completion of the present commitment.

Deliveries to Victor are scheduled to begin in November of this year. This is the third order in the refrigeration field that Kellett has obtained since V-J Day.

### Seattle Branch Office

Air Associates, Inc., Teterboro, N. J., has opened a Seattle branch office and warehouse adjacent to the Boeing Aircraft plant to serve manufacturers and airports in the Northwest. This is the third branch established in the past year, and brings the company's number of branches to seven.

### Beech Gets Order

A large order for spare parts for two-engine Beechcrafts has been placed by the Navy with Beech Aircraft, Wichita, Kan. The order is equivalent in dollar volume to 950 completed aircraft.

Deliveries on the order are to begin in November and extend over a two-year period. The parts are for 300 B-57 conventional trainers and JRB utility transports which the Navy recently acquired from the Army.



### STRATOCRUISER BRIDGE:

Viewpoint of the pilot's compartment of the 136,000-lb. B-24 bomber is illustrated by these drawings. The plan view is for a five-man crew. A. alternative arrangement illustrates the flight engineer's panel and

the observer's chair and puts the positions of navigator, radio operator and engineer closer together for easy manipulation of these various flight operations by a single individual.

## SPECIAL AIR SERVICES

CHARTER

NON-SCHEDULED

INTRASTATE

## Non-scheduled Carriers Score Panam Rate Slash to San Juan

Charge certificated line is trying to stifle competition on lucrative run; Waterman Steamship Corp. claims PAA using "monopoly" practices.

By CHARLES L. ADAMS

Non-scheduled carriers operating between New York and Puerto Rico have accused Pan American Airways of trying to knock out competition on the heavily-traveled route by instituting a low-price, 30-day roundtrip excursion fare to San Juan. The campaign here is \$156, compared to PAA's regular roundtrip tariff of \$334, at \$130 one way.

At least 15 non-scheduled or contract carriers consider the New York-San Juan run their most important operation and numerous other lines make connections along the route. Pan American has been flying these roundtrips daily with 35-passenger DC-4s, while the non-scheduled operators aggregate over 80 one-way flights daily, largely with two-engine equipment.

Eastern Air Lines intends to start New York-Miami-San Juan service Sept. 7, using DC-4s. PAA claims practices—in announced the reduced rates, PAA declared they constituted another step in the carrier's continuing program to broaden the basis of inter-island air travel through lowering fares.

Officials of non-scheduled carriers point out that the new rate of \$180 is for 2,300 miles of flight (1,600 miles each way) or an average fare per mile of 4.7 cents.

They compare this with PAA's airline-wide average of "around 8 cents a mile," rate the advantage of operators which all overseas carriers are experiencing (especially since the Constellation grounding), and note that the excursion fare was introduced at the time principally to get them out of business.

**Waterman Blast**—Waterman Steamship Corp. officials have accused PAA of resorting to "monopolistic practices" in making the

fare reduction. Waterman Airlines, wholly-owned subsidiary of the steamship company, has been on the DC-4 route since 1945, and added passenger service New York-San Juan for \$21.10, 10 percent under PAA's regular \$234 roundtrip rate.

One Waterman spokesman said "Pan American's move is obviously directed against the slight competition it has from non-scheduled operators who have established and maintained their services with their own, not public funds. PAA is taking advantage of its air mail compensation."

Pan American has been wickering closely Waterman's well-advertised "non-scheduled air cruise" to San Juan and reportedly has been gathering information which might be used to show Waterman has been operating above the non-scheduled exemption.



### NON-SCHED'S CARGO GLIDER

Winged Cargo, Inc., Philadelphia, first company licensed to fly glider tours, has been using five CG-4As in approved CAA economic profitability test flights with the tons have included trips between Norfolk and New York, N. Y. President P. Dolan says the non-scheduled line guarantees the experiments a success, and the company plans to ask for NCA as all glider pilots. Winged Cargo transported service Mar. 11 and during May and June flew 211,000 plane miles and 25,000 miles with the glider tours. During this period 165,769 lb. of cargo were loaded along with 9,000 passengers. Total revenue was \$40,000, operating profit \$10,000. The CG-4s are on hand and four DC-4s and one DC-6 are on order. Vice-president of Winged Cargo is Raymond W. Belmont, Jr., and secretary-treasurer is Carl W. Herdic, Jr. All officers are AEA members (Morris & Kelm photo).

**Trails Listed**—Many of the non-scheduled carriers operating between New York and San Juan recently have been attempting to restrict entry on the route. In the past, tariffs northbound had varied between \$30 and \$116 and between \$60 and \$117 southbound.

### Other industry developments

**Unscheduled Airways Association** has decided to work to standardize contracts which exempt passengers as well as cargo. While all service, New York, (The Constellation Line) last month PAA and Airborne Corp. (formerly National Air Lines) Corp.) also intend to join. Officers members of AEA were: J. H. Adams, Jr., AEA and National Airways Freight Corp. (The Flying Pig).

**United States Air Lines** is advertising 200-scheduled 24-passenger DC-6 flights from Los Angeles to San Francisco and Dallas.

**Chandler Airlines**, Salt Lake City, is offering contracts of its members and intends to operate to Nevada, Utah, Arizona, and Colorado. It also intends to operate.

**National Airways Freight Corp.** has announced it will operate a scheduled service to New York, N. Y., Airport.

**United States Air Lines** has announced it will operate a scheduled service to New York, N. Y., Airport. It is offering 10 non-scheduled flights weekly to New York, N. Y., Airport. It will have offices in all principal cities.

**Key Cities Air Transport Service** is making daily flights between Chicago, Ill., and Lake Tahoe with a C-47.

**Chandler Airlines**, Salt Lake City, is offering 10 non-scheduled flights weekly to New York, N. Y., Airport. It will have offices in all principal cities.

**Trans-Louisiana Airways**, New York, is offering 10 non-scheduled flights weekly to New York, N. Y., Airport. It will have offices in all principal cities.

**Trans-Louisiana Airways**, New York, is offering 10 non-scheduled flights weekly to New York, N. Y., Airport. It will have offices in all principal cities. It will have offices in all principal cities.



is willing to serve small cities other than Miami, but only on a similar non-stop basis in major routes.

**Superior Service**—"So far as we are concerned," explains Mr. Robinson, "the two airports—Miami and Tri-Cities, which are but 15 miles apart for us—are really enormously far apart geographically. An airplane leaving Miami for Albany stops at Tri-Cities at the same manner as does a long distance bus which makes two stops in a given city before starting its run. With black-to-black speeds considerably faster than those generally scheduled, and with our airplanes operated for maximum service in a specific area, the resultant transportation is superior to that which could be provided by either feeder or trunk line."

"A regional line can develop a high degree of regularity, reliability and speed between after the planes are loaded in the selected region they may climb through aerosols or bad weather to a comfortable cruising altitude, fly non-stop to their destination and descend in a normal manner on instruments for landings at the terminals."

"Based on our experiences, we feel that is a desirable type of operation cannot accomplish this, since it is obligated to make any intermediate stops, which would have it either to descend repeatedly through the aerosols into small airports without instrument facilities or attempt to fly contact at dangerously low altitude. Contact flights are not a result in a completion factor of 60 percent or less, and low altitude flying is rough and unworkable."

**Expansions Over**—"The operator

feels that its experimental period is over. "We applied for a CAB certificate more than a year ago, and our purpose since has been to serve to establish and to the fixed the contents of regional services and the traffic potential of our area."

In its first month, the company had requests for space from only 146 passengers, a figure that has increased steadily to 1,568 in July, of whom 1,546 were carried.

The line used Fairchild F-27s at the outset "to test our theories of the regional version of feeder service," later acquired twin-engine Cessnas, and currently is operating three new Beechcraft 16-8 planes with full airline radio equipment and two pilots every flight. Frequent extra services indicate a need for larger planes, and company officials are buying the Lockheed L-188.

**High Load Factor**—"Because of the nature of our regional service," Robinson explains, "we do not have to send flights out with empty seats returned for towns along the route. We are able to fly with high load factors for each round trip. Together with new and efficient equipment, this has enabled us to develop a regularity and frequency of service which has had a stimulating effect on traffic."

Actually, he adds, the line is developing traffic which did not exist in any form. Many business men are now making weekly trips to New York, Buffalo, or Albany who in the past made only a few per year. "They consider the \$5 main plane trip relaxing and useful compared to the 6 hr railroad journey formerly required."

The Beechcrafts provide 31 arrivals and departures at Miami and 16 at Tri-Cities, and Robinson points out that "the convenience and expansion of this passenger air service with the addition of mail and express will result in a higher level of business activity for the central New York region."

## Air Travel Red Tape Is Target of IATA

Regional companies aimed at simplifying paper work on international air routes, IATA promises easier rules.

Recommendations by the International Civil Aviation Organization designed to cut down the mass of red tape hampering international air travel are being implemented by the International Air Transport Association. IATA will soon regional committees of operators to attempt to eliminate or simplify the many documents which pilots, crews and passengers must carry on international flights.

The committee will try to establish common rules on general documents and manifests, to establish new passenger certificates, and to have travel agents and identity cards authorized which would replace the complicated passport and visa formalities for passengers.

**Paper Burden**—"IATA officials have been studying the paper burden which has been cut by 40 percent flight by some 50 airlines—each making its own requirements and setting its own forms—at a greater standard to fast, simplified international air transport than either weather or equipment."

It is essential to advertise that by pronouncing the airlines a New Yorker can travel in them it is best spread as many days as filled out documents and waiting for visas as it takes hours to make the flight, an official observed. Foreign Secretary Ernest Bevin at Great Britain declared recently that he regarded visas as "an abomination" and he would like to eliminate them altogether. He proposed great changes also in British procedure.

**Delays Cited**—Meanwhile, R. R. Whitner, TWA's cargo sales director, told a St. Louis business men's meeting recently that international air cargo is held up by customs procedures planned around membership in organizations. It is necessary, he said, that cargo to Europe from the U. S. arrive at our eastern ports of embarkation

at least 24 hours prior to flight departure, and the flights themselves must be completely cleared out two hours before departure in order to afford proper clearance through customs and to make certain the necessary manifests are prepared.

He declared that at each station from which TWA departs on the U. S. it must carry from 100 to 200 copies of the manifest for distribution among various foreign stations at which the plane will stop. "We monthly had one flight from Washington that had only 200 lbs. of cargo on board, but 1,200 copies of forms were necessary to accompany it."

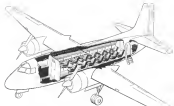
## All American Buys 5 Lockheed Saturns

First purchaser of the new 14-passenger Lockheed Saturn as All American Aviation, which delivered last week that it had contracted for five with options for 35 more.

Total amount of the contract, with parts, will run close to \$600,000 since the price of the two-engine, high wing planes is around \$112,000 each.

Though this is the first order for the sleek, designed especially for feeder line purposes, Lockheed officials say the company officials say sale of about 10 in its project, and the plane has about orders for 400 which will carry passengers into the early part of 1961.

All American, which expects to use the Saturns for passenger service



**Saturn Catalogue**—This catalog drawing of the Lockheed Saturn shows front and side compartments, as one of which All American Aviation plans to furnish its pickup equipment. Though undetailed, AAA officials favor the rear one.

in combination with its exclusive pickup operation, at CAB approval its application, expects to get delivery in a few early next year. The Saturns make a scheduled first flight two months ago.

The ship has a cruising speed of over 240 mph, and top speed of close to 280 mph. (AVIATION NEWS, Nov. 25, 1961) In anticipation of its use, the carrier last week completed its seventh 100-lb pickup at 240 mph.

All American has made 305,000 pickups in the eight years it has been operating. It now averages 100,000 pickups a year on the 1,523 miles it flies four times daily to serve 131 cities and towns in New York, Pennsylvania, Ohio, West Virginia, Kentucky and Delaware.

Estimated direct operating cost per mile at the Saturn is 21 cents. The plane features several design refinements: conventional, armor them interchangeability of parts, a tapered nose, and improved accessibility of controls.

## NWA Surveys Route

First survey flight along Northwest Airlines' new Great Circle route to the Orient—granted in CAR's Pacific decision (AVIATION NEWS, Aug. 12)—has been completed by the carrier. The trip was made from Minneapolis to Anchorage by Seattle.

## Pogue Gets Clients

The new law firm of Pogue & Neal, Charles Neal, Washington, has been retained by Empire Airlines, New York, and Bell Aircraft

## Ship Lines Ask CAB To Review Exclusion

In what may be a final attempt to get "inclusion" from CAB, nine American passenger steamship lines have petitioned the Board to review the over-all effects of excluding U. S. space carriers from participation in overseas air transportation.

The petition asks that CAB give a clear pronouncement as to the wisdom of new carrier legislation under the Civil Aeronautics Act and find that American steamship applicants seeking overseas certificates are under no legal restrictions (under Section 401(b)) not imposed on other applicants.

The Board is requested to study the effect of permitting foreign steamship interests to participate in air transport to and from the U. S. while denying this right to American shipping companies. Attention is called to the effect such denial will have on the continued successful maintenance and operation of the American merchant marine and the present and future needs of the domestic and foreign commerce of the nation, of the postal service and of the national defense.

Every L. Paul, chairman of the Sea-Air Committee of the National Federation of American Shippers, declared the petition "places squarely before CAB the question of public interest involved in the Board's recent denial of American steamship companies' applications for certificates."

A public hearing on all points in-



## AT FEEDER AIRLINES SESSION

Feeder Airlines Association members and their guests were guests of Boeing Aircraft Corp. at a luncheon during the recent FAA meeting in Washington. Present: Admiral Emory S. Land, president, Air Transport Association; Robert R. Kaskad, Boeing Washington representative; Rossman, Olin, FAA president; Clarence Young, CAB member; James M. Landu, CAB chairman.



**Signs for Saturns**—All American Aviation, Pres. Robert M. Lee signs for five Lockheed Saturns as Lockheed Douglas, eastern district manager for Lockheed Aircraft Corp., watches. Order now just under \$600,000, and All American has options for 35 more.

# ROSE-COLORED GLASSES?

A recent editorial in *AMERICAN AVIATION* says: "Steamship companies have been looking at the airplane through rose-colored glasses."

We suggest that the writer of the editorial, and the interests he favors, see an optimist at once. It is our opinion that they are in need of just plain ordinary glasses—good strong ones—because the editorial fails completely to visualize what is at stake in the matter. What is at stake is American overseas trade and travel. Overseas trade and travel are neither new nor mysterious. It does not require rose-colored glasses to see them. It is the age-old struggle for competitive markets by the nations of the world in terms of coal and wheat, refrigerators and automobiles, oil trays and teletypes.

It concerns the men riding the planes who arrange and control the movement of these products. It has to do

## THE SEA-AIR COMMITTEE OF THE NATIONAL FEDERATION OF AMERICAN SHIPPING, ANSWERS AN ATTACK ON THE ELIGIBILITY OF AMERICAN STEAMSHIP COMPANIES TO OPERATE AIRPLANES ALONG THEIR ROUTES.

with the people who vacation in foreign lands. It has to do with the articles produced by this nation which create the salary that pays the grocery bill of the ordinary American citizen.

We admit it is a tedious thing that when a piece of transportation equipment, designed in a special way, reaches a certain speed it suddenly becomes airborne and flies—but to get so wrapped up in this miracle as to forget that the rapid transportation of loaded weights is merely one of the many aspects of a closely knit and highly interrelated pattern of international trade and travel, seriously raises the question of who is wearing the rose-colored glasses.

We fear that the writer of the editorial is wearing a pair of rose-colored spectacles—with the lower lens blacked out!

The editorial not only states the main point and the crux of the problem, but in our opinion contains many misleading and inaccurate statements, to wit:

**The Editorial Says:** "The well-herded steamship lobby" etc.

**We Quote:** In the "Great Silver Fleet News," published by Eastern Air Lines, the head of that company stated: "... policy had been years ago has been kept open-minded, in order, to reserve immediately the opportunity of the Eastern Air Line Family by the expansion of service, your last prejudice nor original motive from being possible by comparison."

**And again:**

Attorneys for Eastern Air Lines on June 18, 1946, filed and later withdrew a petition (Docket 734) which charged, the PCA respondent for estimates and development projects have been conducted and have consisted largely of expenditures to secure local support and influence by bribes, favors, presents, discounts, and other similar means."

"... that PCA has maintained elaborate spies at prominent hotels in Washington and New York and has continued to prison and air strikes in order to secure their support and influence."

Attorneys for PCA on June 26, 1946, stated that, "... PCA does maintain an apartment in Washington and an apartment in New York and has done so for many years for ... and secured accommodations for PCA personnel."

"... the PCA did hold open house at the Statler Hotel on Sunday, June 3, 1946 ... it will be known that almost if not all airlines have given and continue to give receptions in certain key cities."

The Sea-Air Committee challenges the airline, individually, and the Air Transport Association, to make public a detailed statement of their expenditures in connection with their Washington activities and liaisons.

**The Editorial Says:** "It is still somewhat of a mystery as to just why the steamship firms are so anxious to operate airplanes."

**We Say:** There is no mystery. Airline operators and government officials like prestige proudly that airlines will

take away 30% of the first-class passenger airplane revenue. To the passenger steamship companies, this cut would be an almost paralyzing wallop. They want a chance to compete, and to hold their own.

**The Editorial Says:** "Air Transportation is a world of its own, with its own concept of opinion and its own concept of transport."

**We Say:** For air transport to seek to arrogate to itself rights or superlatives based on "know how" is to dismiss all of man's accumulated knowledge of transportation since the discovery of invention of the wheel on the wagon case. We submit that transportation is trade and travel, short, on horseback, on rails, ships, or planes.

**Is air transportation a world of its own?**

Then why did American Airlines, largest domestic air transport system, launch its overseas operation by purchasing an airline established and developed by American Export Lines, a steamship company? Why did they hire the personnel of this line? Why maintain a steamship menu—MF Suez—is chairman of the board? Transportation a world of its own? Then why did Trans World Airways, second largest domestic operator, raise an *Admiral* of the United States Navy (a sea-going operator) as an important post? And why is a former head of Alaska Steamship Line numbered among its high executive personnel?

If air transportation is a "world of its own," how does it happen that Pan American has linked itself with "W. R. Grace"? And how about the Air Transport Association, trade representative of all 25 domestic and overseas airlines, who engaged Rear Admiral Lusk, a shipping man and ex-chairman of the Maritime Commission, as its president and operating head?

**The Editorial Says:** "Another even weirder argument is that foreign steamship companies hold control in their respective air transport system, leave the U. S. steamship companies, in order to build their own against their foreign opponents, must also start the air business. At it has the foreign steamship lines held entire control, ranging from a small percentage of stock to total full control. The interesting fact behind much of this foreign steamship control in airlines is usually one of nationalistic animosity."

**We Say:** It may be overworked, but it is still valid. And, furthermore, an even Nationalistic Economy has so far been denied them as an air enterprise we so freely grant to foreign owners and operators who they apparently place much value

**The Editorial Says:** "If the U. S. companies wish to get to grips in air transportation, there is nothing to stop them from purchasing stock in the open market."

**We Say:** Stock ownership is irrelevant. The steamship operators wish to operate a full transportation line. Passive participation is not that way of doing things.

**The Editorial Says:** "Steamship companies are basically wedded to the sea."

**We Say:** Steamship companies are basically wedded to sea and trade. They have business-promoting facilities, plants and installations which are not connected with ocean air ships.

**The Editorial Says:** "This will do us no harm."

**We Say:** Extensive air services approved by steamship companies, now and in the past, are the well-to-do world of the day beyond question. The companies they are now pressing is further proof that it is well done.

**The Editorial Says:** "We can't blame the steamship going for increasing activity induced out of this new found toy called the airplane."

**We Say:** The steamship companies are not concerned with the new found toy "airplane" as airplanes that they can back to the ship of the American flag when Fabian's air steamship was so labeled. The "new found toy" psychology betrays a sophisticated attitude, and the steamship lines, and their foreign competitors, are all participants of the last school of overseas trade. To them, the airplane is an important new tool in their business of overseas trade.

**The Editorial Says:** "Steamship men inevitably must have a port-to-port approach to transportation."

**We Say:** Shipping companies don't operate on a port-to-port approach. They think and function in terms of great oceanic trade areas. They have large inland possessions to handle and develop their business. However, Pan American, overseas airline pioneer and biggest and most experienced over-

seas operator, has always, and still does, operate on a port-to-port basis.

**The Editorial Says:** "Just ponder a single new route bearing something both legitimate, reduce competition and steamship companies. What possible chance could there be in reaching a decision?"

**We Suggest:** That the editors ponder two recent decisions, one involving the Western Steamship Corporation and the other the Atlantic Navigation Company. Both steamship companies actually own the necessary vessels, assets, and have fully trained and skilled operating staffs, are well equipped, and have flown the routes in question. Both are ready, willing and able to begin immediately the service which the public desperately needs. However, the routes were awarded to others who will be unable to commence operations for a long time.

**The Editorial Says:** "The steamship companies have not financial resources."

**We Say:** The steamship companies have operating capital far compared to many airlines—they are giants in the financial world. What passenger steamship line would attempt to take in 80 million dollar financing program (as an airline recently did)?

**The Editorial Says:** "The main point is that it is not the probabilities against the use of airplanes by transport companies, per se, but the major policy and principle that the major air trunk routes of the world will be operated by experienced air transport companies."

**We Say:** The main point is that it is not even trade and a policy on transportation which will best meet our economic and national interests. Selection of air transport companies for the major trunk routes results of monopoly and will not give us the completely airworthy transportation facilities most we need to protect our national safety and interests.

**In Conclusion:** We believe that steamship lines should be equally as eligible to operate airlines as any other transport companies. We believe that problems in the CAB for authority to add such a service should get a "YES" answer.

The foregoing statements present the problem, as we see it, and our plans are neither half-baked nor are accelerated.







## Neglecting the Export Field

THE FLOURISHING activity of British Government and private officials in Latin America in behalf of their aircraft industry has been well publicized. It is a typical of British zeal elsewhere, and should be taken to heart in this country.

But a new foreign service report from Buenos Aires to the Aircraft Section of the Commerce Department's Office of International Trade turns the spotlight suddenly on another country. There have arrived by shipboard in Argentina a number of six shiny, new French-built planes, under the direction of Andre Bourges, a government official. The fleet will tour all Latin America. Its next destination is Chile where, accidentally, an airline which has given up hope of obtaining American equipment still seeks transports.

The French ships include a Stange 3-seater monoplane trainer, a Morane 500, a 2-seater, a Nord 1190, a 4-seater, and three twin-engine transports of six, eight, and 18-passenger capacity.

The signs increase that the U. S. aircraft industry, and the Department of State, are in for an unhappy awakening. Because the Latin Americans are being told confidently, as they inspect this touring trade show, that the French aircraft industry—mainly nationalized—has recovered sufficiently to permit immediate export of most of these six types. The French apparently mean business. The British Miles aircraft firm is negotiating for a new plant in Argentina.

But the British and French are not alone. Other recent reports to the Aircraft Section indicate similar earnings by aviation manufacturers in Sweden, Spain, and Belgium, for example. Following its recent trade pact with Argentina, Russia is reported to have initiated efforts to sell some of its surplus Zivko transports there. This is the Russian version of our own Douglas.

South American, and other foreigners as well, protest that the U. S. aircraft models they want are unobtainable because of red tape or lack of interest on the part of our Government or manufacturers, or both. Other protests concern our high prices, or that we do not offer the kind of planes they need.

A few U. S. firms are showing gratifying appreciation of the potentiality of the foreign market, but their number is small. The Export Division of the Aircraft Industries Association should be given

its head and the State Department's rather smug attitude toward the extent of its "proper" participation in foreign trade development needs a realistic overhauling.

The aircraft manufacturers have not done a fraction of the job of our airlines in getting the world with U. S. aviation. There are many legitimate reasons, of course, tied up with war limitations, but the war is over and the rest of the world needs aircraft. We believe we have the world's best planes. Certainly, we have the greatest production capacity. What are we waiting for? France, England, Russia?

## Capitalizing on Miami's Blindness

THE CONTRACT AIR CARRIER Association of Miami, which boasts a monthly payroll of \$150,000 and 650 employees, is saving New Orleans as a refuge from exorbitant fees charged by the Dade County Port Authority. A recent editorial in the News (July 29) detailed that body's persistent policy of discouraging all independent aviation enterprise in the Miami area.

In refreshing contrast to Miami conditions, the Louisiana legislature recently passed an amendment to its state constitution granting a 10-year exemption from personal property taxes for aircraft hangars and machine shops. The amendment will face a referendum in November for final approval. New Orleans and Louisiana are capitalizing on Miami's striking lack of foresight.

## Orville Wright

ORVILLE WRIGHT, the first man to fly a powered heavier-than-air craft, is 75 years old today, Aug. 19. It has been nearly 33 years since he crashed on the lower wing of the famous 15-hp. biplane at Kitty Hawk, N.C. and made the 120-ft. flight which signaled the birth of the aircraft industry. Still a brilliant aeronautical scientist, who has kept fully aware of the great advances of aeronautics in the intervening years, Mr. Wright spends most of his time in his Dayton, Ohio, laboratory and home. AVIATION NEWS, as a voice of all branches of the aviation industry, conveys its best wishes to Orville Wright on his birthday.

ROBERT H. WOOD

# The Birdmen's Perch

by Major Al Williams, AUSA, "TATTERED WING TIPS,"  
Gulf Aviation Products Manager, Gulf Bldg., Pittsburgh 30, Pa.



reference?"

Interested?"

Will you please, then? Send us a Little Known Fact on the subject above and sending these may be yours!

Not to mention the consolation!

## THIS TAKES THE CAKE . . .

We were choosing with a sensation in Washington a few weeks ago.

We got to talking about a paper cake the maker. And guess what? The prize only cost the Atlantic Process—Gulf made. Did a cake winning, suppose the eggs did go into this cake?

Now the great old of the available stuff—put it we got rid of the two laboring parts of the cake when we notice the only that got into Gulfgrade.

But the others a surprise—and neither do we!

This marvelous that makes our a respectable percentage of those eggs—the shape—being only the yolk, which the rest on but super cake!

What we do is to select out a respectable percentage of that already tested out with our own step, the Atlantic Process. Then let's only the super-laboring than the original product!

Which we put in our label? "Gulf grade!"

WHICH WE PUT IN OURS  
LABELED "GULF-PRIDE!"



## SPECIAL NOTE

We put this a thing in an AAF journal which we think, from a little opening it will.

## IMPORTANT

## USE YOUR

## CHECK LIST

## IMPORTANT

## USE YOUR

## CHECK LIST

## IMPORTANT

## USE YOUR

## CHECK LIST

Scientological use

Gulf Oil Corporation and Gulf Refining Company...makers of





## *Flying* **TEST CELL**

Keeping tabs on a red-hot hurricane best describes the activities of these G-E engineers. They're checking an instrument panel in the pressurized chamber of a B-29, G-E's Flying Laboratory. The instruments are connected to various parts of a gas turbine, the TG-180, which has been installed in a bomb bay of the giant plane. In this manner, accurate records can be kept of actual flight performance of this G-E development, and adjustments made without danger to personnel.

Center of this development work is the G-E Flight-test Division which was recently dedicated at Schenectady. Besides the big hangar, there are offices for engineers, a workshop where parts are made, and space for development work on all types of airborne equipment. Here, work begun under the impetus of war years has not slackened on equipment useful in commercial aviation. Here, too, problems connected with new planes of all types can be studied and equipment flight tested. Remember, General Electric is working on electric power systems (a-c and d-c), aircraft instruments, gas turbines, and many other devices. Perhaps we have the answers to your electrical problems. Our engineers will be glad to discuss them with you. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*



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AND  
ENGINEERED SYSTEMS  
FOR AIRCRAFT**

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